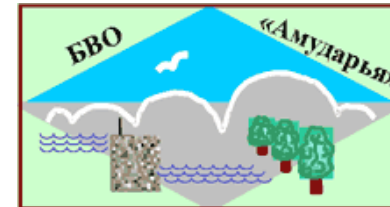




**Balkh University**

Islamic Republic of Afghanistan



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# **Monitoring and Assessment of Transboundary Water Resources in the Amu Darya Basin to Support Practice and Policymaking in the Region**

*Zafar Gafurov*  
*Bekzod Akramov*

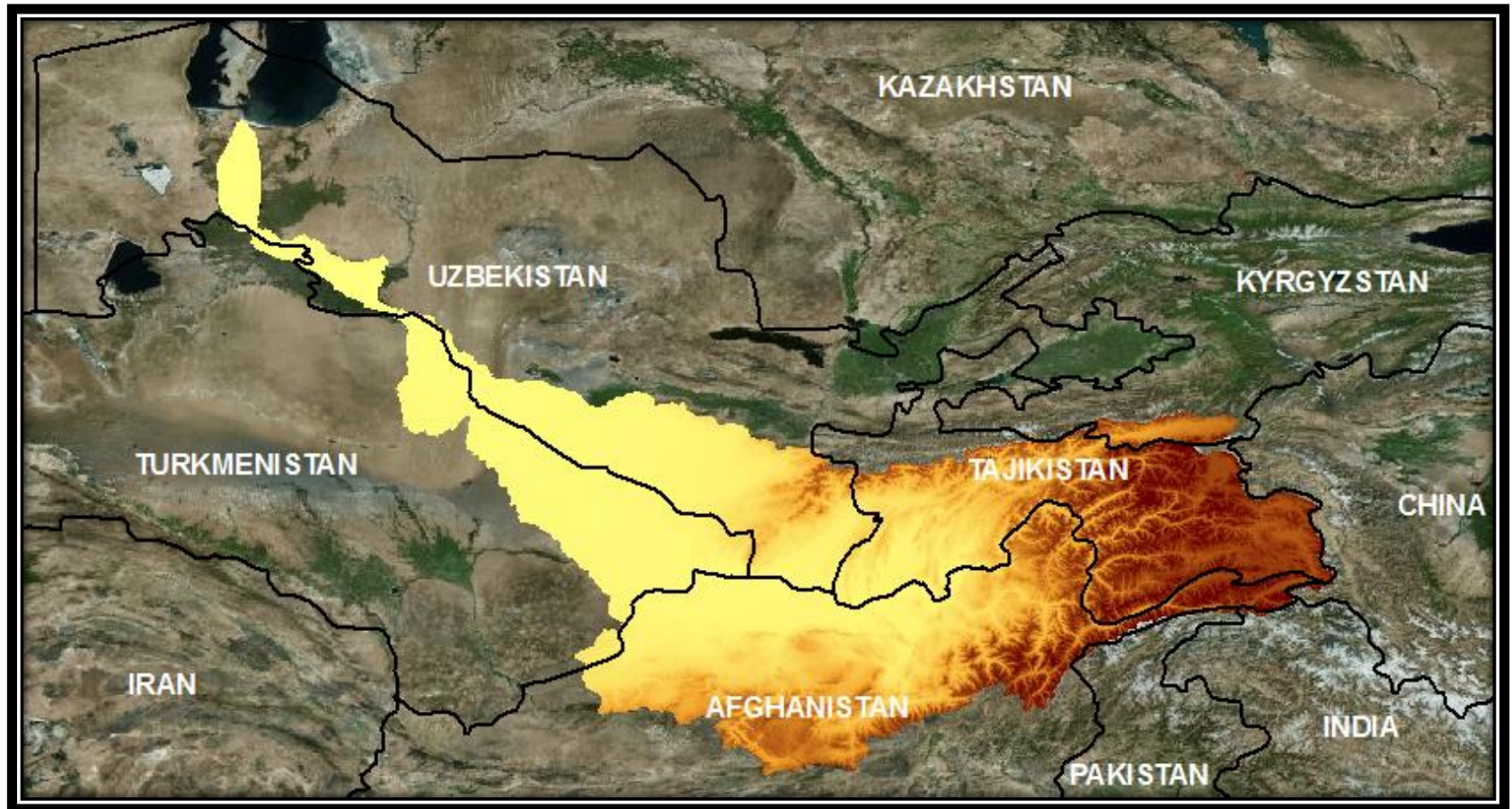
**ISTC Conference**  
**November 2, 2017**

# Project Objectives

- Generate data for the execution and validation of accurate scenarios for planning and allocation of water resources in selected STTs in the Amu Darya basin
- Convert raw data into user-friendly maps, charts, and graphics (using GIS and RS/EO mapping tools) for visual interpretation and create a digital diagnostic atlas of water resources
- Expand data collection, management, and analysis tools and options for key stakeholders, including government officials, practitioners, and researchers to inform water management practices and to support policymaking that will lead to more productive and efficient use of resources in the region
- Identify and assess socioeconomic conditions in the riparian countries, and conduct analysis of institutional issues in the region, as well as climate change resilience and adaptation strategies and activities

# Study Area

Amu Darya is the largest river in Central Asia with a catchment area of 534,739 km<sup>2</sup> and length of 2,400 km. It is a transboundary river shared by Afghanistan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.



# Project Implementers

## Leading Institution:

- Institute of Water Problems, Hydropower and Ecology, Academy of Sciences, Tajikistan

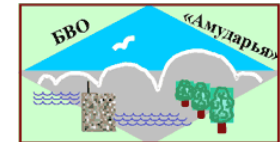


## Participant Institutions:

- International Water Management Institute – Central Asia Office
- Balkh University, Afghanistan
- Amu Darya Basin Water Organization, Uzbekistan



**Balkh University**  
Islamic Republic of Afghanistan



## Foreign Collaborators:

- United States Geological Survey, USA
- University of Twente, The Netherlands



**ITC**  
UNIVERSITY OF TWENTE.

# Project Logic Model



## Problem Specification

- Lack of up-to-date, easily accessible and user-friendly data collection and management systems and tools to inform decision-making processes to assess the use of water resources in the Amu Darya basin

## Program Theory

- *If* we expand data collection, management, and analysis tools and options and also create an informative digital atlas of transboundary water resources in the Amu Darya basin, *then* we can help increase the knowledge and awareness of relevant stakeholders (e.g., policymakers, specialists, and researchers) improving their capacity to better assess the use of water resources and to develop evidence-based management practices and policies -- ***and that would then lead*** to improved agricultural, socioeconomic and environmental outcomes and impacts in the region.





# Project Logic Model (continued)

## Project Inputs



Project funding



Project sites (representative STTs, canals, and an aquifer in the Amu Darya basin)



Software and tools to collect, manage and analyze data and to produce maps, charts, and infographics



Participating institutions, Individuals, and other relevant stakeholders



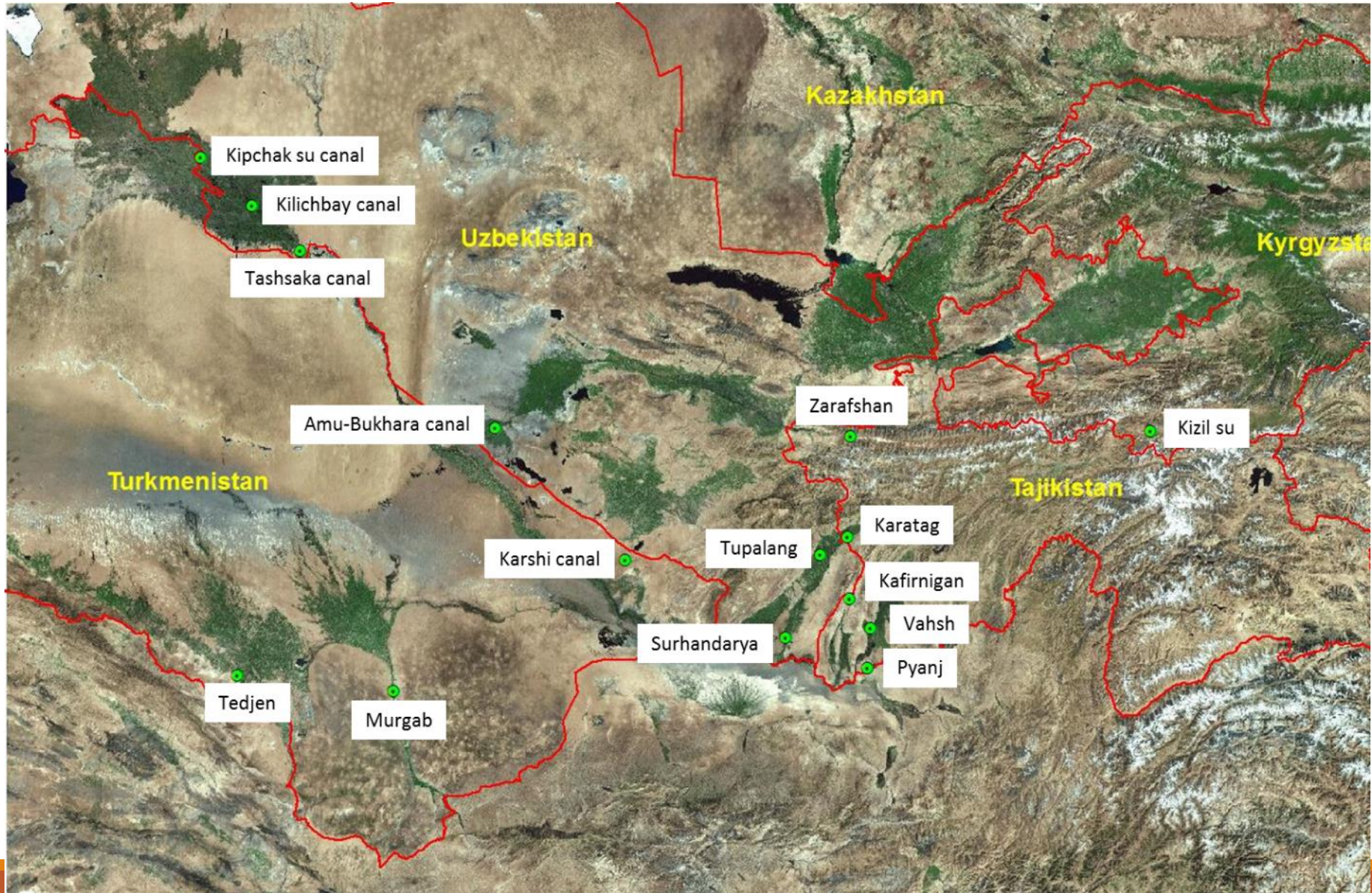
Project offices and other sites for data collection and management



Sites, materials, and staff to carry out capacity building and strengthening activities



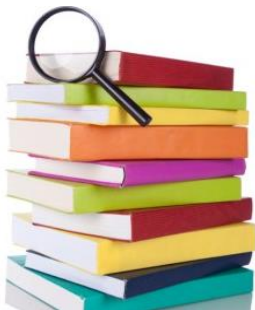
# Project Sites





# Project Logic Model (continued)

## Project Activities



Systematic literature review



Data collection and management



GIS and RS/EO programming to produce user-friendly maps, charts, and graphics (digital diagnostic atlas)



Analyses of data, produced maps and charts, as well as of regional institutions and socioeconomics



Capacity building and strengthening activities such as workshops, seminars, and policy dialogues



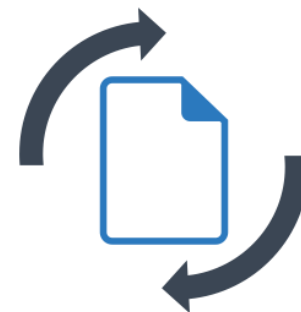
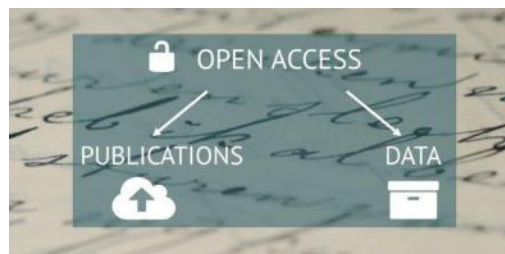
Monitoring and evaluation at various stages of the project (i.e., needs assessment; process evaluation; impact evaluation)



# Project Logic Model (continued)

## Project Outputs

- Systematic literature review report
- Methodology report (i.e., protocol)
- Up-to-date, high-quality data and information on transboundary water resources in the Amu Darya basin and digital atlas containing GIS and RS/EO based maps, charts, and other infographic reports produced
- Analytical and technical reports, as well as policy briefs and other publications
- Number of capacity building and strengthening activities (e.g., seminars, workshops, policy dialogues, etc.) and the number of people attending such activities
- Open-access data management and sharing system for regional bodies



# Project Logic Model (continued)

## Project Outcomes

- Improved access to data and information on transboundary water resources in the Amu Darya basin
- Improved capacity to collect, manage and share data and information on water resources in the region
- Increased knowledge and awareness of water resources in the region to support policymaking and management practices



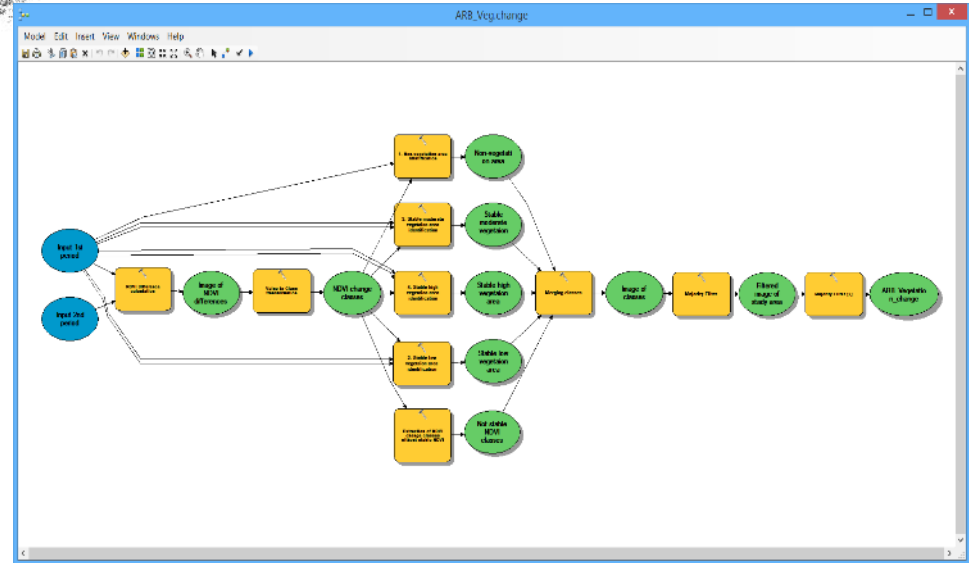
# Project Logic Model (continued)

## Project Impacts

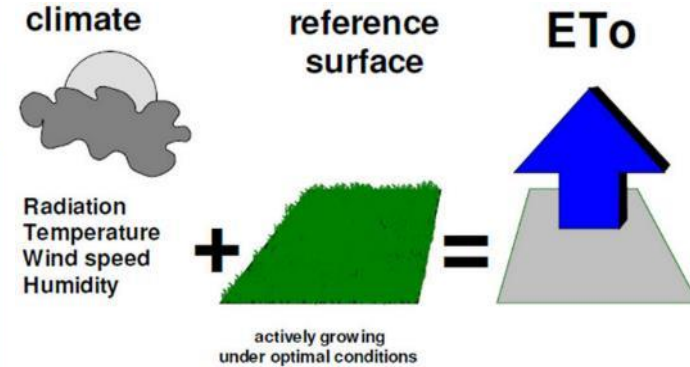
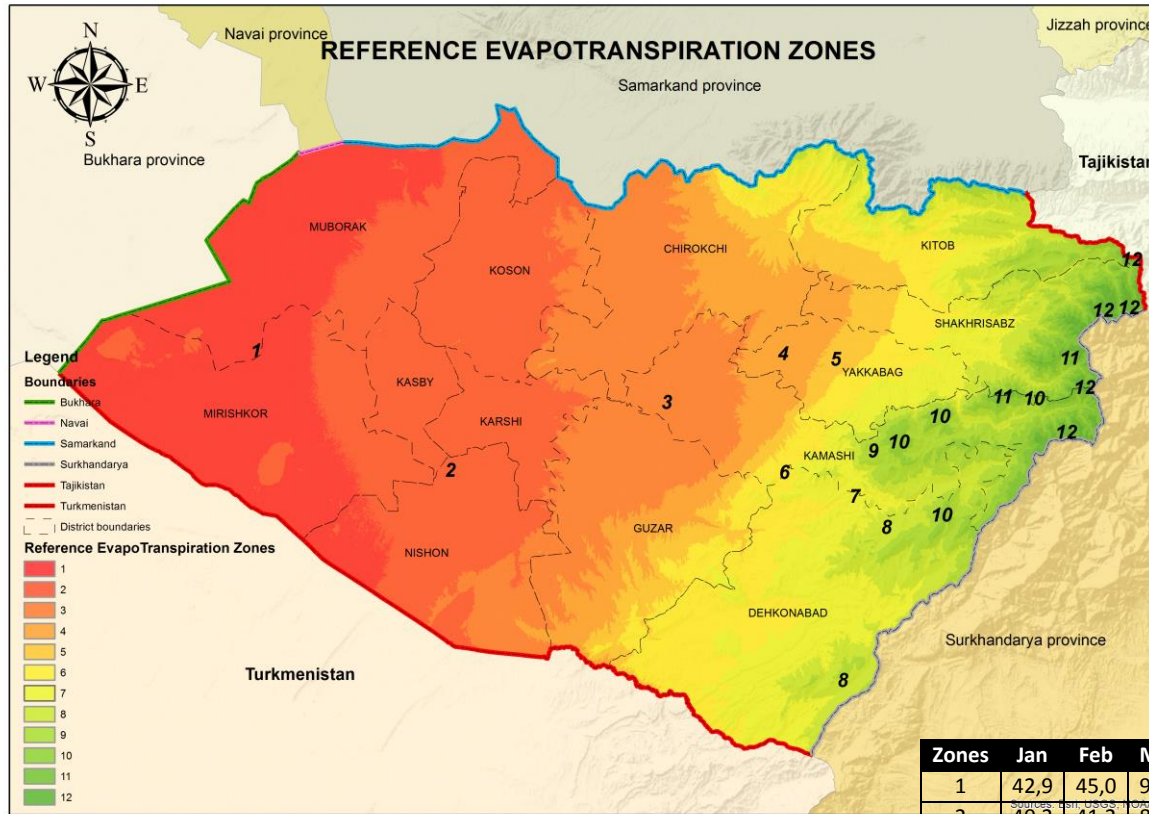
- Evidence-based water and land resources management policies and practices in the Amu Darya basin and the greater Central Asia region
- Enhanced cooperation on land and water resources management and on CC between participating countries in transboundary context (i.e., targeted programs that address and mitigate the effects of CC)
- Improved land- and water-use efficiency
- Better socioeconomic outcomes (e.g., health, nutrition, employment, education, migration) for the general population in the region
- Better environmental outcomes (e.g., ecosystem, sanitation, water and land quality, etc.) in the region







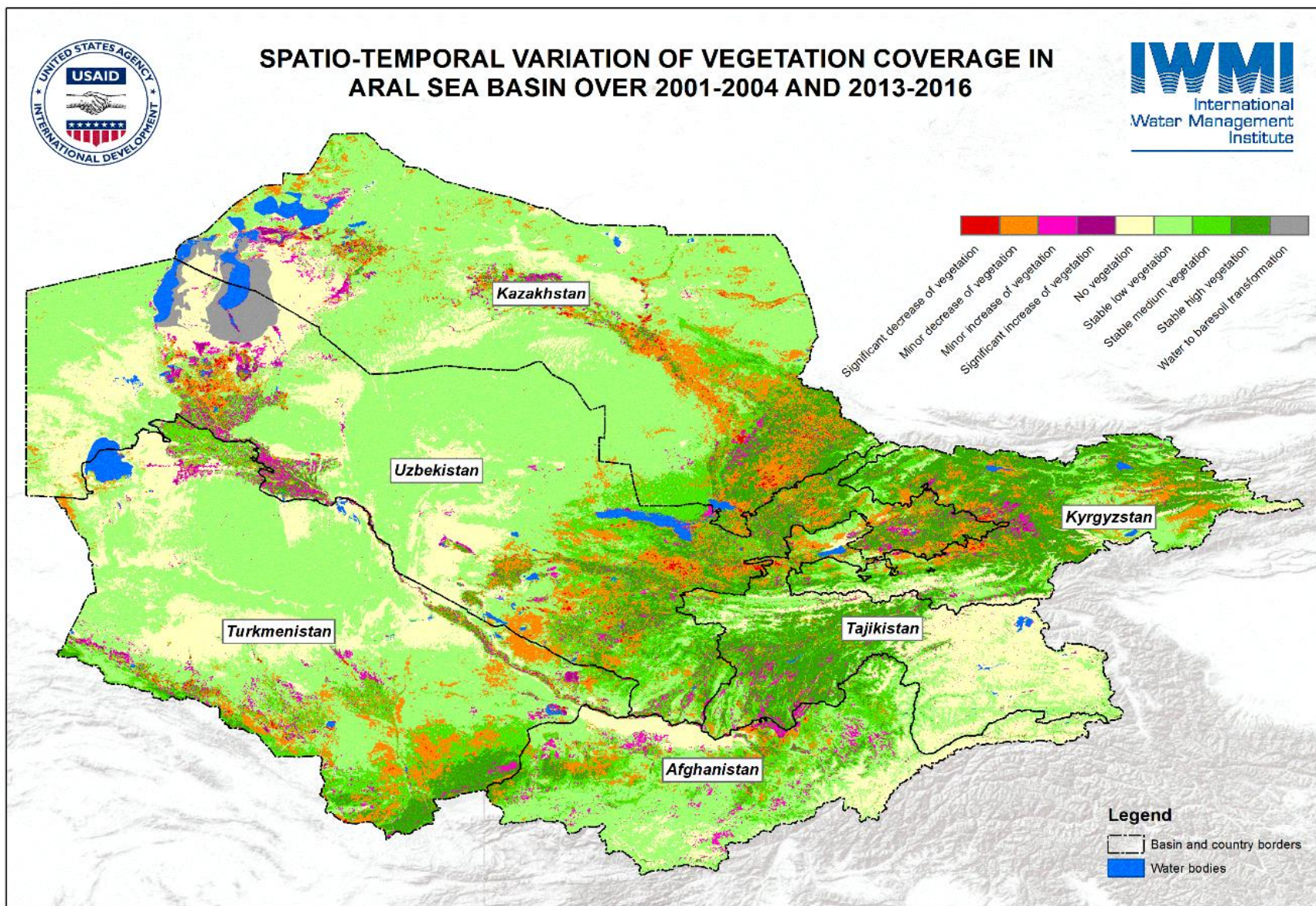
# Examples of Current Activities



Zones	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	42,9	45,0	97,9	158,2	233,7	241,8	273,8	225,4	174,9	108,2	59,2	29,9
2	40,2	41,2	89,2	149,4	223,8	234,9	264,5	221,5	169,8	104,0	55,2	28,3
3	36,2	36,3	76,1	132,3	208,6	224,9	250,7	214,5	162,8	98,4	48,2	26,2
4	34,9	35,1	72,2	125,0	203,9	221,2	245,2	211,3	160,9	97,2	45,8	25,8
5	34,7	35,0	71,7	123,1	202,9	219,9	243,6	210,2	160,8	97,2	45,4	25,8
6	34,3	35,1	71,0	121,4	202,2	219,1	242,9	210,1	161,3	97,7	45,1	25,8
7	34,0	35,5	70,9	118,1	201,5	217,1	240,8	208,7	161,8	98,2	44,9	25,9
8	33,0	34,9	69,4	113,2	197,8	212,3	235,7	204,6	160,2	97,0	43,8	25,2
9	31,3	33,4	66,2	106,4	191,3	205,3	228,5	198,8	157,1	94,5	41,9	23,8
10	30,2	32,3	64,3	103,1	186,9	201,6	224,7	195,7	154,9	92,8	40,8	22,9
11	29,2	31,1	62,5	100,8	182,0	198,9	222,0	193,2	152,6	91,0	39,8	22,2
12	29,1	30,8	61,8	99,9	180,0	198,8	221,7	192,5	151,8	90,5	39,3	22,0



# Examples of Current Activities





Developed by:  
**IWMI**  
International  
Water Management  
Institute

Digital Diagnostic Atlas  
**MURGAB RIVER BASIN**

*Zafar Gafurov and Sarvarbek Eltararov*

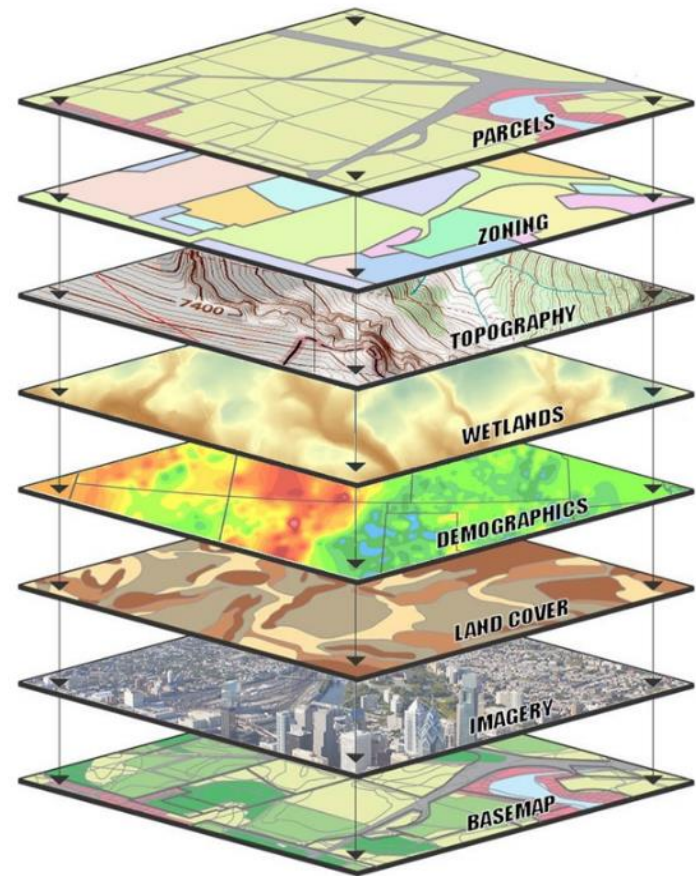


Program: Transboundary  
water management in  
Central Asia



Supported by:  
**giz**  
Deutsche Gesellschaft  
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Zusammenarbeit (GIZ) GmbH

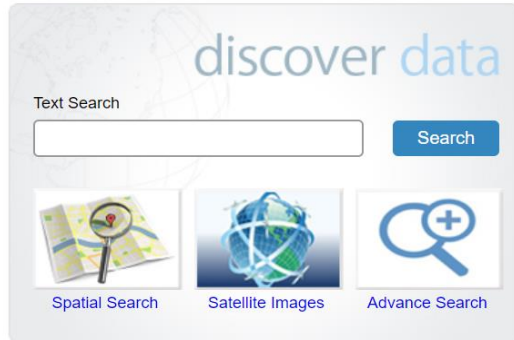
# Decision support database





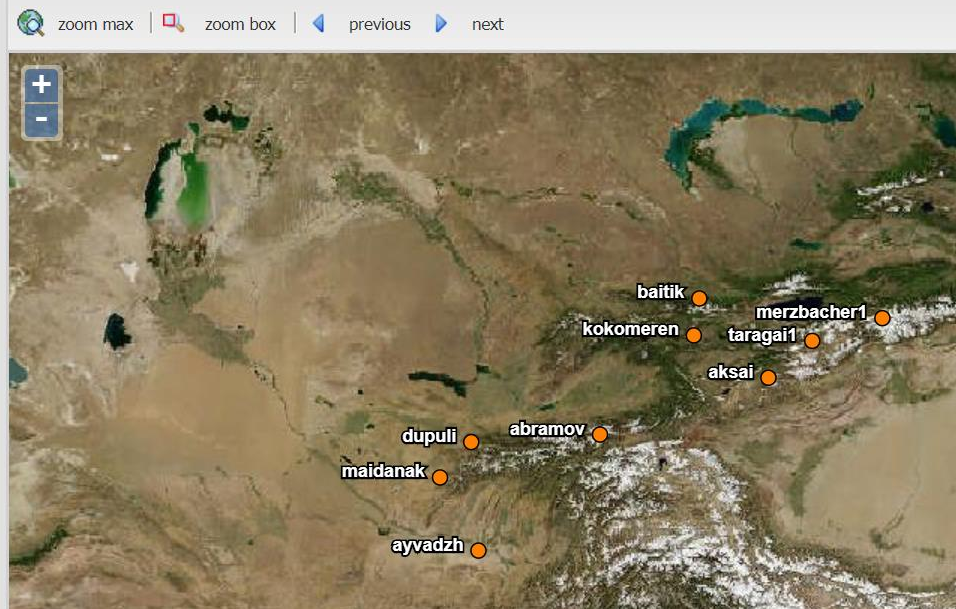
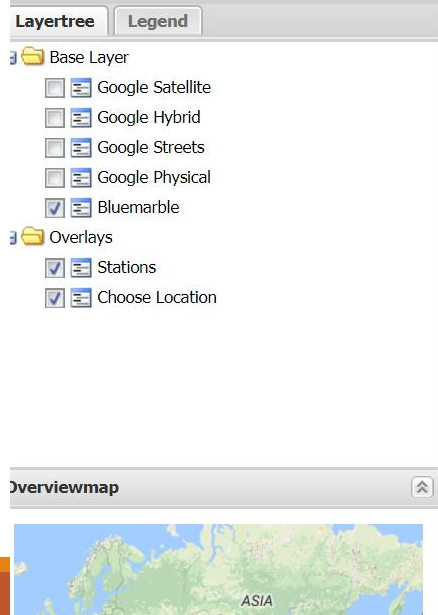
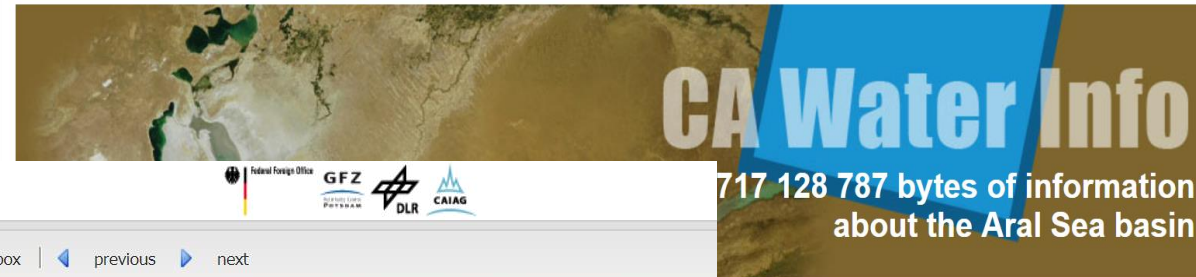
**WATER DATA PORTAL**  
IWMI Research Data

# EXISTING DATA PORTALS



[E-MAIL](#) | [MAP](#) | [SEARCH](#) | [ПО-ПЫСҚЫ](#)

**CAWA** Regional Research Network  
«Central Asian Water»







# The project will succeed because...

- We have active participating institutions who have extensive project experience in the region, technical capacity to carry out planned project activities, and strong willingness to work on improving the process of collecting, managing, and disseminating data and information on transboundary water resources
- The current geopolitical climate in Central Asia is becoming more supportive of regional cooperation on issues of transboundary water resources management
- There is increasing willingness from stakeholders to use modern technology and data analysis tools to support policymaking and inform management practices

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**Thank you for your attention!**

